Trubhuvan University

Institute of Science and Technology

Office of the Dean

Model Question

B.Sc. CSIT/Fifth Semester/Computer Network (CSC 301)

Full Marks: 60

Pass Marks: 24

Candidates are required to answer the questions in their own words as far as practicable.

Group A

Long Answer Questions (Attempt all questions) [10x2=20]

1. What are the benefits of layered network architecture? Compare OSI Reference model with TCP/IP Protocol suit.
   OR
   What is TCP? Show the header format of TCP segment and explain each field.
2. How does CRC work to detect the errors with multiple bits? A bit stream 10011101 is transmitted using a standard CRC method. The generator polynomial is x^3+1. Show the actual bit string transmitted. Suppose the third bit from the left is inverted during the transmission. Show how the error is detected at the receiver's end.
   Group B

Short answer Questions (Attempt any eight questions) [5x8=40]

3. What do you mean by data encapsulation? Explain.
4. What do you mean by a routing algorithm? How adaptive routing differs with non-adaptive routing?
5. List the fields of IPv4 header. What is the main function of time to live (TTL) field?
6. What do you mean by NAT? How does it work?
7. What is flow control? Explain sliding window algorithm for flow control?
8. What is DNS? Explain the importance of DNS in Internet.
9. Discuss briefly on ALOHA and slotted ALOHA protocols.
10. Explain the various applications of multimedia networking.
11. Describe the principle components of network management architecture with suitable diagram.

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Bachelor Level/ Third Year/ Fifth Semester/Science　　　　　　**Full Marks: 60**

Computer Science and Information Technology　　　　　　　　**Pass Marks: 24**

(CSc. 301 – Computer Network)　　　　　　　　　　　　　　**Time: 3 hours.**

Candidates are required to give their answers in their own words as for as practicable.

Group A

Attempt all questions.　　　　　　　　　　　　　　　　　　　**[10x2=20]**

1. Explain the principles of application layer protocols. What do you mean file transfer?
   OR
   What are the main relationship between transport layer and network layer? What are the transport layers uses in internet?
2. Explain the congestion control principle and its approaches.

Group B

Attempt any eight questions.　　　　　　　　　　　　　　　　**[8x5=40]**

3. Explain the connection oriented and connectionless service.
4. Explain the working principle of DNS.
5. What do you mean by pipelined reliable data transfer protocol?
6. What do you mean by hierarchical routing?
7. Explain the multicasting routing and its application.
8. Define data link layer and its services.
9. Mention the types of multimedia networking applications.
10. What are the key components of network management architecture?
11. Explain the asynchronous transfer mode (ATM).

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Group 'A'

Long answer questions
Attempt all questions. (2x10=20)
1. Explain the OSI reference model.

OR

What do you mean by TCP? Explain the TCP structure.
2. Define DNS. Explain the DNS records and DNS messages.

Group 'B'

Short Answer Questions
Attempt any eight questions. (8x5=40)
3. What do you mean by internet protocol stack?
4. Differentiate between transport layer and network layer.
5. Explain the principle of congestion control.
6. What do you mean by IP datagram fragmentation?
7. Explain the point to point protocol (PPP).
8. What do you mean by multicasting routing?
9. Explain the Internet Control Message Protocol (ICMP).
10. What are the various types of multimedia networking application?
11. What types of intra structure is needed for network management?